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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/657,761	09/08/2000	Pradeep Kathail	CISCO-3198	2724

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EXAMINER

TANG, KUO LIANG J

ART UNIT	PAPER NUMBER
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2122

DATE MAILED: 09/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/657,761

Applicant(s)

KATHAIL ET AL.

Examiner

Kuo-Liang J Tang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1, 5-6, 9-10, 13-14 are rejected under 35 U.S.C. 102(a) as being anticipated by Ueki (US Patent No. 6,345,383).

3. *Per Claim 1*, Ueki disclosed:

*-In a data processing system having a memory, an operating system executing within said data processing system comprising: a debug support module configured to associate a debug flag with debug commands issued within the data processing system* (see Column 1, Lines 21-32, “A debugging support device, using a debugging support method is a device which supports debugging operations and such a device supports efficient debugging of a program through functions which, for example, (1) indicate the part of the program being executed, (2) display execution information concerning the program execution (e.g. contents of the register and **memory**, etc.), (3) break (stop) the execution of the program at places (breakpoints) designated by the user, and (4) record the debugging history such as the user's instructions and execution information, while the program to be debugged is being **executed** and stopped according to the operations **by the user**.”) Examiner interprets “**executed ... by the user**” is a “**debug command**”, and (see Column 5, Lines 64-67, “The designation as a member may be realized, for example, by securing a flag block corresponding to each instance and raising this **flag** while an object is designated as a member.”); *and*

***-a kernel module coupled for communication with said debug support module, said kernel module comprising: a process creation unit configured to spawn special processes for commands issued which having a debug flag, said special processes having a debug flag indicator set; and a messaging transfer unit configured to transfer messages from a source process to a destination process, said message transfer unit further configured to associate a debug flag indicator into said destination process if said source process includes said debug flag indicator.*** (see Column 4, Lines 51-54, “An eleventh object of the present invention is to present a debugging support device which sends the messages, **sent** and **received** by each object which is to be discussed, to a designated **debugger object**.”). Kernel model is inherently present. Examiner interprets “sent” is from source, “received” is to destination debug object.

4. ***Per Claim 5***, Ueki disclosed:

***-receiving a message for transfer from the source process to the destination process; determining if said source process is associated with a debug flag; associating a debug flag into said destination process if said source process is associated with a debug flag; and communicating the message to the destination process.*** (see Column 4, Lines 51-54, “An eleventh object of the present invention is to present a debugging support device which sends the messages, sent and received by each object which is to be discussed, to a designated debugger object.”). Examiner interprets “sent” is from source, “received” is to destination debug object.

5. ***Per Claim 6***, Ueki disclosed:

***-determining if a debug/management command is issued within the data processing system; spawning a new process associated with the debug/management command; and***

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*associating a debug flag with said new process to identify said new process as a debug process.* (see Column 1, Lines 21-32, “A debugging support device, using a debugging support method is a device which supports debugging operations and such a device supports efficient debugging of a program through functions which, for example, (1) indicate the part of the program being executed, (2) display execution information concerning the program execution (e.g. contents of the register and **memory**, etc.), (3) break (stop) the execution of the program at places (breakpoints) designated by the user, and (4) record the debugging history such as the user's instructions and execution information, while the program to be debugged is being **executed** and stopped according to the operations **by the user**.”) Examiner interprets “**executed ... by the user**” is a “**debug command**”, and (see Column 5, Lines 64-67, “The designation as a member may be realized, for example, by securing a flag block corresponding to each instance and raising this **flag** while an object is designated as a member.”).

6. **Claim 9** is the storage device readable claim corresponding to the method claim 5 and is rejected under the same reason set forth in connection of the rejection of claim 5. Further Ueki disclosed **storage device**. (see Column 15, Lines 14-19, “Besides containing the main **storage device** comprised of a CPU and RAM, the computer for realizing the embodiments typically comprises input devices, such as a keyboard, mouse, etc., external storage devices, such as a hard disk device, etc., output devices, such as a CRT display device, printer, etc., and the necessary input/output control circuits.”).

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7. Claim 10 is rejected under the same reason set forth in connection of the rejection of claim 6.

8. **Claim 13** is the system claim corresponding to the method claim 5 and is rejected under the same reason set forth in connection of the rejection of claim 5.

9. Claim 14 is rejected under the same reason set forth in connection of the rejection of claim 6.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2, 7, 11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueki (US Patent No. 6,345,383) in view of Valizadeh (US Patent No. 5,838,994).

12. **As Per Claim 2**, Ueki disclosed memory (see Column 1, Lines 21-32, "A debugging support device, using a debugging support method is a device which supports debugging operations and such a device supports efficient debugging of a program through functions which, for example, (1) indicate the part of the program being executed, (2) display execution information concerning the program execution (e.g. contents of the register and **memory**, etc.),

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(3) break (stop) the execution of the program at places (breakpoints) designated by the user, and (4) record the debugging history such as the user's instructions and execution information, while the program to be debugged is being executed and stopped according to the operations by the user.”) Examiner interprets “executed ... by the user” is a “debug ommand”, and (see Column 5, Lines 64-67, “The designation as a member may be realized, for example, by securing a flag block corresponding to each instance and raising this flag while an object is designated as a member.”), Ueki didn’t explicitly disclose memory pool. However, Valizadeh teaches a *memory management unit configured to allocate the memory into a main memory pool and a reserve memory pool*, (see Column 3, Lines 1-5, “The fixed region and the reserved region together comprise the “**reserved**” **portion** of the buffer memory space. Any buffers (or bytes) that remain are located in the **common region** of the buffer memory space and are free for allocation to any buffer queue.”). *said memory management unit further configured to allocate memory from said reserve memory pool only to said special processes.* (see Column 2, Lines 64-67, “The **reserved region** comprises an additional number of buffers (or bytes) reserved for allocation only to buffer queues that **service activated logical channels**.”). Therefore, it would have been obvious to incorporate the teaching of Valizadeh into the teaching of Ueki to have different memory pools. The modification would have been obvious because one of ordinary skill in the art would have been motivated to better utilize available memory.

13. *As Per Claim 7*, Ueki disclosed memory (see Column 1, Lines 21-32, “A debugging support device, using a debugging support method is a device which supports debugging operations and such a device supports efficient debugging of a program through functions which,

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for example, (1) indicate the part of the program being executed, (2) display execution information concerning the program execution (e.g. contents of the register and **memory**, etc.), (3) break (stop) the execution of the program at places (breakpoints) designated by the user, and (4) record the debugging history such as the user's instructions and execution information, while the program to be debugged is being executed and stopped according to the operations by the user.”) Examiner interprets “executed ... by the user” is a “debug ommand”, and (see Column 5, Lines 64-67, “The designation as a member may be realized, for example, by securing a flag block corresponding to each instance and raising this flag while an object is designated as a member.”), Ueki didn’t explicitly disclose memory pool. However, Valizadeh teaches a ***memory management unit configured to allocate the memory into a main memory pool and a reserve memory pool***, (see Column 3, Lines 1-5, “The fixed region and the reserved region together comprise the “**reserved**” **portion** of the buffer memory space. Any buffers (or bytes) that remain are located in the **common region** of the buffer memory space and are free for allocation to any buffer queue.”). Therefore, it would have been obvious to incorporate the teaching of Valizadeh into the teaching of Ueki to have different memory pools. The modification would have been obvious because one of ordinary skill in the art would have been motivated to better utilize available memory.

14. Claim 11 is rejected under the same reason set forth in connection of the rejection of claim 7.



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15. Claim 15 is rejected under the same reason set forth in connection of the rejection of claim 7.

16. Claims 3, 8, 12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueki (US Patent No. 6,345,383) in view of Valizadeh (US Patent No. 5,838,994) further in view of Pouban et al. (US Patent No. 4,104,718) hereafter Pouban.

17. *As Per Claim 3*, Ueki and Valizadeh disclosed memory pool. Ueki and Valizadeh didn't explicitly disclose allocated memory to said special processes from said reserve memory pool when said main memory pool is depleted. However, Pouban teaches *allocated memory to said special processes from said reserve memory pool when said main memory pool is depleted*. (see Column 39, Lines 30-44, "If it is possible to allocate potential process numbers to the (job) step, the backing store space requirement value (BSM) is obtained from the resource records within the Job Control Structure as indicated at 401 and, at 403, BSM is **tested** against the difference between BSUSED (the amount of backing store already **reserved**) and BSMAX (the maximum size of backing store available to users. **If sufficient additional space exists, BSUSED is incremented by the value BSM and a successful return code is sent to the calling process.** If insufficient space is available, the requested space size BSM is tested against BSMAX. If the requested size is greater than the maximum size available to users, the request is not credible and this fact is reported to the user as indicated at 404) "). Therefore, it would have been obvious to incorporate the teaching of Ueki and Valizadeh into the teaching of Pouban to allocated memory

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to said special processes from said reserve memory pool when said main memory pool is depleted. The modification would have been obvious because one of ordinary skill in the art would have been motivated to make memory usage more efficient.

18. *As Per Claim 8*, Ueki and Valizadeh disclosed memory pool and process with a debug flag. Ueki and Valizadeh didn't explicitly disclose allocated memory to said special processes from said reserve memory pool when said main memory pool is depleted. However, Pouban teaches *allocated memory to said special processes from said reserve memory pool when said main memory pool is depleted*. (see Column 39, Lines 30-44, "If it is possible to allocate potential process numbers to the (job) step, the backing store space requirement value (BSM) is obtained from the resource records within the Job Control Structure as indicated at 401 and, at 403, BSM is **tested** against the difference between BSUSED (the amount of backing store already **reserved**) and BSMAX (the maximum size of backing store available to users. **If sufficient additional space exists, BSUSED is incremented by the value BSM and a successful return code is sent to the calling process.** If insufficient space is available, the requested space size BSM is tested against BSMAX. If the requested size is greater than the maximum size available to users, the request is not credible and this fact is reported to the user as indicated at 404) "). Therefore, it would have been obvious to incorporate the teaching of Ueki and Valizadeh into the teaching of Pouban to allocated memory to said special processes from said reserve memory pool when said main memory pool is depleted. The modification would

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have been obvious because one of ordinary skill in the art would have been motivated to make memory usage more efficient.

19. Claim 12 is rejected under the same reason set forth in connection of the rejection of claim 8.

20. Claim 16 is rejected under the same reason set forth in connection of the rejection of claim 8.

21. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueki (US Patent No. 6,345,383) in view of Holland (US Patent No. 6,243,860).

22. *As Per Claim 4*, Ueki disclosed process with debug flag. Ueki didn't explicitly disclose regular processes lacking a debug flag indicator. However, Holland teaches ***spawn regular processes for commands issued which lack a debug flag, said regular processes lacking a debug flag indicator***, (see Column 6, Lines 15-18, "The stack is employed because a parent process can call a child process, and that **child process, in turn, can spawn other child processes** using nested calls."). This is just a regular process spawned without any flag associated with it. Therefore, it would have been obvious to incorporate the teaching of Holland into the teaching of Ueki to have a regular processes lacking a debug flag indicator. The modification would have been obvious because one of ordinary skill in the art would have been motivated to increase flexibility for the kernel to create process.

***Conclusion***

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

24. **Title:** Method for debugging keyboard basic input/output system (KB-BIOS) in a development notebook computing system. **USPN:** 6,336,195.

25. **Title:** Resource management in a clustered computer system. **USPN:** 6,151,688.

26. **Title:** System and method for performing joins and self-joins in a database system. **USPN:** 5,983,215.

27. **Title:** Debug interface including operating system access of a serial/parallel debug port. **USPN:** 5,978,902.

28. **Title:** System and method for performing an efficient join operation. **USPN:** 5,802,357.

29. **Title:** Process assignment by nodal affinity in a multiprocessor system having non-uniform memory access storage architecture. **USPN:** 5,784,697.

30. **Title:** Program loading method which controls loading of processing programs of a computer from a service processor which supports the computer. **USPN:** 5,680,623.

31. **Title:** Apparatus and method for a data processing system having a peer relationship among a plurality of central processing units. **USPN:** 5,230,065.

32. **Title:** Apparatus and method for alterable resource partitioning enforcement in a data processing system having central processing units using different operating systems. **USPN:** 5,027,271.

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33. **Title:** Apparatus for synchronizing and allocating processes among several processors of a data processing system. **USPN:** 4,590,555.

34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuo-Liang J Tang whose telephone number is 703-305-4866.

The examiner can normally be reached on M-F 8:30 to 5:00.

35. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q Dam can be reached on 703-305-4552.

36. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

(703) 872-9306, ( for formal communications intended for entry)

**or:** (703) 872-9306 ( for informal or draft communications, please label

**"PROPOSED"** or **"DRAFT"**)

37. Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA. , 22202. 4<sup>th</sup> Floor(Receptionist).

KLT / KCT

WZ  
WEI ZHEN  
Patent Examiner  
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